

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A system for providing a VPN (Virtual Private Network) service by connecting a VPN to a mobile communication network, comprising:

a home agent (HA) in which location information of a mobile node (MN) and information about the VPN service for the MN are stored when the HA receives from the MN, a location registration request message for the VPN service;

a foreign agent (FA) for receiving location registration information from the MN, transmitting a location registration request message to the HA, receiving information about the VPN service from the HA and transmitting data to an ISP (Internet Service Provider) router in a same network as that of the ~~of~~ an FA network, when receiving a VPN service request;

an ISP server positioned between the ISP router of the FA network and an ISP router of the VPN, for managing information on the ISP routers and establishing IP tunneling between the ISP routers;

a router network for routing the FA network and the VPN, and receiving and forwarding ~~transmitting~~ the data using an IP tunnel to a correspondence node; and

a VPN server for providing the VPN service connected to the ISP router of the VPN.

2. (Currently Amended) The system as claimed in claim 1, wherein the ~~router network includes a~~ ISP server for searching an edge Internet Protocol (IP) router in the ~~the~~ ISP router of the FA network using an address of the FA.

3. (Original) The system as claimed in claim 1, wherein the HA prevents the MN from accepting a call request received from a specific node in an IP network while the MN is performing the VPN service.

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (Cancelled)

9. (Cancelled)

10. (Cancelled)

11. (Cancelled)

12. (Cancelled)

13. (Cancelled)

14. (Cancelled)

15. (Cancelled)

16. (Cancelled)

17. (Cancelled)

18. (Cancelled)

19. (New) The system as claimed in claim 1, wherein the MN transmits an address of the HA and an address of the VPN server to the FA during VPN registration, and performs the VPN service by receiving a temporary ID for use of the VPN from the FA during the location registration.

20. (New) The system as claimed in claim 4, wherein the MN stores the address of the VPN server and an address of a router in the network, received from the FA, and performs the VPN service using the received addresses.

21. (New) A method for providing a VPN (Virtual Private Network) service to an MN (Mobile Node) located in an FA (Foreign Agent) network, connected to the MN, comprising the steps of:

managing in an ISP (Internet Service Provider) server information on ISP routers for establishing an IP (Internet Protocol) tunnel between an ISP router in the FA network and an ISP router of the VPN;

upon receiving a location registration request message for the VPN service from an FA in an HA (Home Agent), storing an address of the FA connected to the MN in the HA, wherein the HA further comprises information about the VPN service for the MN;

receiving information about the VPN service from the HA in the FA in response to the reception of the location registration request message by the HA;

establishing an IP tunnel between the ISP router in the FA network and the ISP router of the VPN; and

receiving and transmitting the data from/to the VPN for performing the VPN service using the IP tunnel .

22. (New) The method as claimed in claim 21, further comprising blocking an Internet service when being in a VPN service state.

23. (New) The method as claimed in claim 21, further comprising transmitting a location registration failure message for the VPN service upon failure to receive a reply signal within a time period after transmitting the location registration request message.

24. (New) The method as claimed in of claim 21, further comprising activating a timer for a time period when the VPN service is available and performing a VPN service mode.

25. (New) The method as claimed in of claim 21, further comprising transmitting from the MN an address of the HA and an address of the VPN server to the FA during VPN registration, and performing the VPN service by receiving a temporary ID for use of the VPN from the FA during the location registration in the MN.

26. (New) The method as claimed in of claim 21, further comprising storing the address of the VPN server and an address of a router in the network received from the FA in the MN, and performing the VPN service using the received addresses.